

SPECIES OF THE GENUS *PEDIوبيUS* WALKER (EULOPHIDAE : ENTEDONTINAE) FROM INDIA¹

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(With a plate)

Additional generic characters of pronotum, sub-genital plate and external female genitalia are suggested for the genus *Pediobius* Walker. Key to Indian species of *Pediobius* is given. *P. imbreus* Walker and *P. longicarpus* sp. nov. are described and illustrated. Material deposited in Zoological Museum, Aligarh Muslim University, Aligarh, India.

Genus *Pediobius* Walker

Pediobius Walker, 1846, *Ann. Mag. Nat. Hist.* 17 : 184.

Type-species : *Entedon imbreus* Walker designated by Ashmead (1904).

The genus *Pediobius* was proposed by Walker (1846). Ashmead (1904) designated *Entedon imbreus* Walker as type species of the genus *Pediobius* Walker. Gahan (1921) synonymized the genera, *Pseudacriasoides* Girault and *Epiplerotropis* Girault with *Pleurotropis* Foerster. Nikol'skaya (1952) recognized *Pediobius* Walker and *Pleurotropis* Foerster as valid genera and separated them on the basis of presence of incomplete and complete parapsidal furrows. Gahan (1932), Ferriere (1953), Askew (1962), Peck (1963) and Bouček (1965) synonymized the genera *Pseudacrias* Girault, *Pleurotropis* Foerster, *Rhopalotus* Foerster, *Eupleurotropis* Girault and *Cluthaira* Cameron respectively with *Pediobius* Walker. Bouček (1965) declared the genus *Microterus* Spinola to be a synonym of *Pediobius* Walker and wrote 'As *Pediobius* is today already a well-established and well-known name, it is taken here as the valid name for the genus and, consequently, *Microterus*, although older than the former name, is dropped

into synonymy'. He revised the European species of the genus *Pediobius*. Recently, Kerrich (1973) made a comprehensive study on the South Asiatic and Australian species of the genus *Pediobius*. The generic characters proposed by Peck *et al.* (1964) and Bouček (1965) apply well on the species under study. We suggested some new generic characters which are as follows: Pronotum with antero-lateral arms long and narrow, anterior margin deeply concave, posterior margin convex (Pl. 1, fig. E); first valvifers semicircular with basal and apical angles at different levels (Pl. 1, fig. I); third valvulae short, movably articulated with second valvifers (Pl. 1, fig. J); subgenital plate with anterior margin straight, posterior margin with a triangular notch in middle (Pl. 1, fig. L). 9 species of the genus *Pediobius* are known to occur in India. We raised the total to 10 by describing one new species. A key to Indian species of *Pediobius* is provided mainly based on Kerrich (1973).

KEY TO INDIAN SPECIES OF *Pediobius* WALKER, BASED ON FEMALES.

1. Frontovertex with reticulation strong or moderately strong almost throughout and more or less regular.....2

—Frontovertex with reticulation not strong or moderately strong, but either fine and regular or in greater part weak to indistinct..... 7

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NEW DESCRIPTIONS

2. Basalis bearing hairs, normally two, and cubital hair-row starting immediately beyond it. 3

—Basalis bare, and cubital hair-row starting beyond the large speculum postbasale : sculpture of scutum and scutellum uniformly reticulate : scape 6 times as long as wide, first funicle segment twice as long as wide, longer than pedicel : ocelli arranged in obtuse triangle ; first abdominal tergite short, one-fourth the length of abdomen. *P. longicarpus* sp. nov.

3. Sculpture of scutellum nearly uniform, either reticulate or striate almost throughout. 4

—Sculpture of scutellum not nearly uniform, partly striate or striate-reticulate and partly reticulate, often partly smooth. 5

4. Sculpture of scutellum in greatest part and of mesoscutum similar, reticulate almost throughout : petiolar segment a little longer than broad.
. *P. acantha* (Walker)

—Sculpture of scutellum regularly striate almost throughout, very dissimilar from that of mesoscutum : petiolar segment much broader than long.
. *P. bethylicidus* Kerrich

5. Head, seen from above, not so broad, less than $2\frac{1}{2}$ times breadth of its median length and frontoververtex less than $1\frac{1}{2}$ times : first funicle segment, in side view, about $1\frac{1}{2}$ times as long as broad : scutellum strongly longitudinally striate at sides almost to apex, with reticulation at apex that is rather wide-meshed but much weaker, and may extend forward broadly in mid line or may be evanescent, leaving a shining median band in about basal two thirds : space between notaular pits about as broad as a pit. 6

—Head, seen from above, relatively broad, $2\frac{1}{2}$ to 3 times breadth of its median length and frontoververtex usually about $1\frac{1}{2}$ times : first funicle segment, in side view, in well-developed specimens, about $2\frac{1}{2}$ times as long as broad : scutellum longitudinally striate-reticulate, merging to regular reticulation in about apical third, the sculpture of almost uniform strength except that, narrowly in mid line in basal part, it is finer yet very distinct : space between notaular pits very much narrower than a pit. *P. foveolatus* (Crawford)

6. Antennal funicle 3-segmented and pronotal collar sharply margined as is normal for the genus : mesoscutum

having longitudinal striation on sides of mid lobe and on parapsides, its hind margin between the notaular pits raised and strongly emarginate : petiolar segment much broader than long : lower face, as normally in the genus, almost smooth : stibiae not or hardly pale at base and apex. *P. elasmii* (Ashmead)

—Antennal funicle 4-segmented : the smooth pronotal collar clearly indicated by a change of sculpture but with no elevated margin : mesoscutum without longitudinal striation, its hind margin between the notaular pits very weakly emarginate : petiolar segment a little longer than broad : lower face very distinctly reticulate except narrowly in mid line : tibiae very distinctly pale at base and apex.
. *P. agaristae* (Cameron)

7. Frontoververtex at least in greater part, with reticulation fine and regular : pronotal collar having sides strongly, or rather strongly narrowed : cutellum having sculpture more or less uniform, very distinct throughout : basalis bare and cubital hair-row starting beyond the speculum postbasale. 8

—Frontoververtex in greater part with reticulation weak and irregular to indistinct : pronotal collar having sides no more than moderately narrowed : scutellum having a median band, percurrent or almost so, with sculpture more or less indistinct, sometimes this median band broad and shining : basalis bearing hairs and cubital hair-row starting immediately beyond it. 9

8. Smaller species, of length about 1.3 mm : head, seen from above subglobose, not sharply narrowed behind eyes, with ocelli in a strongly acute triangle, and no fine keel running back from the lateral ocelli, the frontoververtex not as broad as its median length : antennae having first funicle segment in side view about quadrate, the second and third very distinctly transverse : pronotal collar having fore and hind margins parallel : mesoscutum having hind margin weakly emarginate, the notaular pits shallow and ill-defined : scutellum finely longitudinally reticulate throughout : parapsite in Mantid Oothecae. *P. fraternus* (Motschulsky)

—Larger species : head, seen from above, more transverse, sharply narrowed behind eyes, with ocelli in about a right-angled or slightly acute triangle, and a fine keel running back from the lateral ocelli, the frontoververtex at least slightly broader than its median

length : antennae having first funicle segment in side view about twice as long as broad, the second and third distinctly longer than broad : pronotal collar wider at sides than in middle, the fore and hind margins not parallel : scutellum strongly longitudinally striate, merging to reticulate behind
 *P. stenochoreus* Kerrich

9. Occipital carina discontinuous, represented only by a short ridge developed behind each laterel ocellus : antennal scape very slender, almost parallel-sided for the greater part of its length, about eight times length of its greatest breadth : third funicle segment about quadrate
 *P. waterstonii* (Masi)

—Occipital carina continuous, as is normal in the genus : antennal scape slightly rounded below, four times length of its greatest breadth : third funicle segment distinctly broader than long
 *P. imbreus* Walker

Pediobius imbreus Walker

(Plate 1, figs. A-M)

Entedon (Pediobius) imbreus Walker, 1846, *Ann. Mag. nat. Hist.* 17 : 184. *Pleurotropis detrimentosus* Gahan, 1930, *Proc. U. S. natn. Mus.* 77 : 9. *Pediobius imbreus* Walker; Kerrich, 1970, *Orient. Insects*, 4 : 89.

Female (Redescribed in detail).

Head : Dark with metallic bluish reflections, wider than long in facial view ; frontovertex distinctly wider than long, weakly and finely reticulate ; ocelli brown, arranged in obtuse triangle, lateral ocelli by their own diameters from orbital and occipital margins separately ; occipital carina continuous ; frontal fork with arms obtusely diverging ; eyes silvery ; malar space as long as eye width ; malar sutures absent ; antennae inserted at lower level of eyes ; prominence between antennal sockets one-fifth the width of frons between eyes ; mandibles with two acute teeth (fig. A) ; maxillary and labial palpi each 1-segmented (fig. B).

Antennae (fig. C) : Dark with metallic reflections, 7-segmented excluding 1 ring segment ; scape four times as long as wide (0.16 : 0.04 mm), slightly longer than club ; pedicel one and a half times as long as wide, as long as first funicle segment ; funicle 3-segmented, segments 1-3 gradually decreasing in length and increasing in width distad ; first funicle segment distinctly longer than wide, second and third distinctly wider than long ; club 2-segmented, slightly more than twice as long as wide (0.13 : 0.06 mm), longer than preceding two funicle segments together.

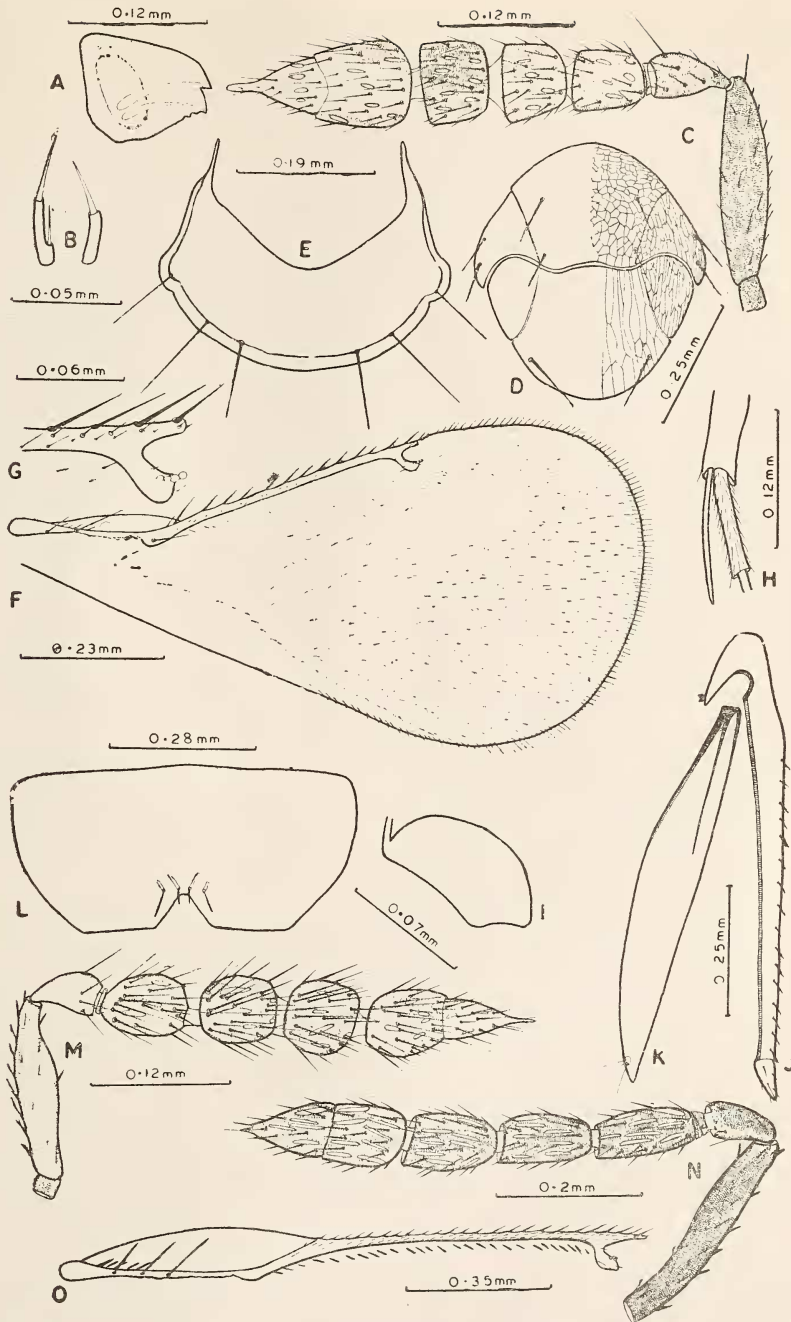
Thorax (fig. D) : Dark with metallic bluish green reflections ; parapsidal furrows distinct anteriorly ; pronotum with antero-lateral arms long and narrow, anterior margin deeply concave, posterior margin convex, posterior sub-marginal ridge distinct bearing 3 pairs of long setae (fig. E) ; scutum reticulate and scutellum with longitudinal reticulate sculpture having a median smooth band ; scutum and scutellum with 4 and 2 setae respectively ; propodeum with a submedian carina diverging backwards, intercarinal space raised.

Fore wings (fig. F) : Hyaline, twice as long as wide (1.15 : 0.52 mm), sparsely setose, basalis bearing hairs and cubital hair-row starting immediately beyond it ; costal cell much shorter than marginal vein ; submarginal and marginal veins with 2 and 12 setae respectively ; postmarginal vein slightly shorter than stigmal vein (fig. G) ; a row of 14 setae beneath the marginal vein ; marginal fringe short, spaced by a distance equal to one-third their length.

Hind wings : Hyaline, four and a half times as long as wide (0.86 : 0.19 mm) ; marginal fringe short, spaced by a distance equal to one-third their length.

Legs : Coxae, trochanters, femora and tibiae of all legs dark with metallic bluish reflections ; tarsi of fore legs completely and pretarsus of

Khan & Shafee : Genus *Pediobius*



Figs. A-M : *Pediobius imbreus* Walker ♀, ♂ : (A) Mandible, ♀ ; (B) Maxillary and Labial palpi, ♀ ; (C) Antenna, ♀ ; (D) Part of thorax in dorsal view, ♀ ; (E) Pronotum, ♀ ; (F) Fore wing, ♀ ; (G) Part of fore wing venation, ♀ ; (H) Part of hind leg, ♀ ; (I) First valvifer, ♀ ; (J) Second valvifer and third valvula, ♀ ; (K) Outer plate of ovipositor ♀ ; (L) Subgenital plate, ♀ ; (M) Antenna, ♂.

Figs. N & O. *Pediobius longicarpus* sp. nov., ♀ ; (N) Antenna, (O) Fore wing venation.

